

ARO-FE Executive Bulletin

Feb 15, 2002 - May 15, 2002



Recent Abstracts: Click on [WI2001](#) & [IAT2001](#)- the First Asian-Pacific Conference on Web Intelligent (WI 2001) and Intelligent Agent Technology (IAT 2001). View: Invited Talks, Web Information Management, Retrieval, Agents, Mining and Farming, Web-based Applications, Agent Learning and Adaptation, and more...

[WI2001 & IAT2001](#) **Note:** Please contact us on more information on any of the items listed in this Bulletin

Seed Projects – FY02

For details please access our Feb-May 2002 Quarterly Report in our Webpage

Feedback



"ARO-FE SAMPLE
FEEDBACK.ppt"

– Functional Graded Materials (ARL Project)

Ti/TiB2 “lightweight” FGM for armor applications

– Multiscale Dynamic Characteristics of moving cracks in Tetragonal Perovskite Crystals

Field theory to reveal the scaling characteristics of a moving crack from macro to nano.

– A New Method of Inner Surf. Mod. of Tubes using Plasma Source Ion Implantation

Surface modification method for strongly bonded and chemically stable coatings on the bores of cylinders

– Improvement of Optical Properties of Silica Glass for Photonic Applications:

Cutback on number of amplification facilities by reducing optical losses

– Modeling of Active Optical Systems with Nonlinear Amplifiers:

New generation of laser commo devices and systems based on the active use of nonlinear optics effects.

– Nonlinear Photonic Crystals: Concepts and Applications:

Techniques for obtaining both linear and nonlinear solutions to problems dealing with generic, multi-dimensional PBG structures, waveguides, and other similar photonic circuits.

ARO-FE Tech Briefs: Click blue titles

& check out **samples** of the S & T developments in Japan in Mech. & Env. Sciences, Chemistry, Materials & Physics.

Mechanical and Environmental Sciences

1. Waste sludge treatment technology using super critical water technology.
2. Small size pure water production system poly electrolyte (PEFC) fuel cells.
3. High Efficiency Methane Fermentation Technology Using Biomass.
4. Recycling Technology for Polystyrene Packing Matls
5. Update on the first Commercial PET recycling plant.
6. Furnace System run by brown gas produced by electrolysis of water.
7. Commercialization of fuel cells battery for cars

Chemistry

1. New Hydrogen production technology
2. New porous material absorbs CO2 twice as much as activated carbon
3. Methanol production technology from methane gas using bacteria.
4. Recovering Methane from Methane Hydrate from 1000meters below the Ground

Chemistry (Cont.)

5. New “friendly” and cost effective catalyst for caprolactam production
6. Poly-crystal silicon production technology for solar battery.
7. Two layers CNT (Carbon-Nano Tube) production tech

Materials Science

1. Mg-Ti alloy production for hydrogen absorbing alloy applications
2. Stainless Steel with High Strength & Toughness
3. Short length glass fiber used for photo-amplification
4. Single crystal (plate) of gallium nitride
5. Sonochemical process & nanosize powders

Physics

1. Studies of dynamic photonic crystals
2. 1 MV Field-emission electron microscope
3. Attosecond wave packet engineering
4. Biological and health effects of radio frequency Electromagnetic fields
5. Solid electrolytic capacitors
6. Present and future of organic solar cell
7. Development of photoelectron spectroholography - For investigating 3D atomic images of solid surfaces -

Conferences Abstracts presently available and ready to be added to the ARO-FE WEBSITE:

SILICON CARBIDE AND RELATED MATERIALS; ELECTRONIC MATERIALS & PACKAGING; MICROOPTICS; QUANTUM DOTS QUANTUM COMPUTING WORKSHOP; US-JAPAN LOW COST PRODUCTION OF CERAMICS AND RELATED MATERIALS WORKSHOP; BULK METALLIC GLASSES